

**TECHNICAL WORK MAY NOT BEGIN PRIOR TO CO APPROVAL**

NASA/GODDARD SPACE FLIGHT CENTER

**REQUEST FOR TASK PLAN / TASK ORDER**

<b>CONTRACTOR</b>	<b>CONTRACT NO./TASK NO.</b>	<b>JOB ORDER NUMBER</b>	<b>APPROVAL</b>
<b>QSS Group, Inc.</b>	<b>NAS5- 99124 TASK NO. 78 AMENDMENT</b>	<b>410-287-15-63-89</b>	<b>99</b>

**TASK TITLE:** (NTE 80 characters; include Project name)

**Fiber Optic Interconnect Laboratory (FOIL) Services**

**APPROVAL:** (Type or print name and sign)

**ASSISTANT TECHNICAL REPRESENTATIVE (OR TASK MONITOR)**

John Kolasinski

**DATE**

5/4/1999

**ORG CODE**

565

**MAIL CODE**

565

**PHONE**

301-286-6109

**BRANCH HEAD**

Paul Bryant

**DATE**

May 10, 1999

**CODE**

565

**PHONE**

301-286-7897

**CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE (COTR)**

Fred Huegel

**DATE**

5/10/99

**CODE**

568

**PHONE**

301-286-2285

**FLIGHT HARDWARE, CRITICAL GSE OR SOFTWARE?**

(If YES, NEED CODE 303 CONCURRENCE NEXT BLOCK)

☐ NO ☒ YES

**CONTRACTING OFFICER'S QUALITY REP.**

**DESIGNATED FAM:**

The contractor shall identify and explain the reason for any deviations, exceptions, or conditional assumptions taken with respect to this Task Order or to any of the technical requirements of the Task Order Statement of Work and related specifications. The contractor shall complete and submit the required Reps and Certs.

(To be completed by Contracting Officer)

**C.O. Requested Quote on:**

**Date:** MAY 12 1999

Contractor will develop specification or statement of work under this task for a future procurement. ☒ NO ☐ YES

Flight hardware will be shipped to GSFC for testing prior to final delivery. ☐ NO ☐ YES ☒ N/A

Government Furnished Property/Facilities: ☐ NO ☒ YES - SEE LIST OF GFP (offsite only) / FACILITIES (onsite only)

Onsite Performance: ☐ NO ☒ YES If yes: ☒ TOTAL ☐ PARTIAL  
If partial, indicate onsite work in SOW by asterisk (\*)

Surveillance Plan Attached: ☒ NO ☐ YES

Highlighted Contract Clauses: (to be completed by Contracting Officer)

Per Clause H.14, Task Ordering Procedure, subparagraph (f), the effective date of this task order shall be May 12, 1999.

Per the Contracting Officer's letter, dated August 26, 1999, the subject task was cancelled effective August 17, 1999. (See Amendment A to this task.)

**INCENTIVE FEE STRUCTURE (check one)**

(See Contract NAS5-99124, Attachment K, Incentive Fee Plan)

	<input checked="" type="checkbox"/> No. 1	<input type="checkbox"/> No. 2	<input type="checkbox"/> No. 3	<input type="checkbox"/> No. 4	<input type="checkbox"/> No. 5
Cost	10%	50%	25%	25%	%
Schedule	15%	25%	25%	50%	%
Technical	75%	25%	50%	25%	%

(To be completed by Contracting Officer)

The ~~target~~ cost of this task order is \$ 2,132. Final Cost per 533M Report, 9/15/99.

The ~~target~~ fee of this task order is \$ 138. Earned Incentive Fee for the task.

The total target cost and target fee of this task order as contemplated by the Incentive Fee clause of this contract is \$ 2,270.

The maximum fee is \$ 202.

The minimum fee is \$0.

**AUTHORIZED SIGNATURE:**

THIS TASK ASSIGNMENT IS ISSUED ACCORDING TO THE CONTRACT CLAUSE "TASK ASSIGNMENTS AND REPORTS"

*Lorrie L. Eakin*

SIGNATURE OF CONTRACTING OFFICER

10/7/99

DATE

Lorrie L. Eakin  
Contracting Officer

TYPED NAME OF CONTRACTING OFFICER

**CONTRACTOR'S ACCEPTANCE:**

AUTHORIZED SIGNATURE

DATE

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QSS Group, Inc.	99124	78	

Applicable paragraphs from contract Statement of Work: Function 2-Execution Phase Services

**STATEMENT OF WORK:** (Continue on blank paper if additional space is required)

The contractor shall provide services for Code 565's Fiber Optic Interconnect Laboratory (FOIL) to meet all task requirements (see page 3).

**PERFORMANCE SPECIFICATIONS:**

See page 3.

**APPLICABLE DOCUMENTS:**

NASA-STD-8739.5  
AS 1773  
EIA/TIA 455 Series  
GSFC ISO 9000  
Project Related Drawings  
Project Related Documents

**TASK END DATE:** ~~03/30/00~~ Cancelled 8/17/99**MILESTONES/DELIVERABLES AND DATES:**

The Contractor shall deliver ~~X~~ all work product generated under the task prior to its cancellation within 5 working days of receipt of this document.

~~Laboratory Inspections X Monthly and Random Spot Inspections~~ Cancelled  
~~Hardware Yield Report X Monthly~~ Cancelled  
~~Material/Parts/Equipment Shortage Report X Monthly~~ Cancelled  
~~Documentation X As Required by Task Plan/Task Order and Project Schedule~~ Cancelled  
~~MAP Termination and testing of harnesses X X/31/99~~ Cancelled  
~~MAP Integration and test of electronic boxes X X/30/99~~ Cancelled  
~~MAP Environmental testing support X X/31/00~~ Cancelled

**PERFORMANCE STANDARDS:**

Schedule: On-time delivery of as needed services and hardware.  
Technical: Government acceptance of documentation.

**FINAL DELIVERY DESTINATION (NAME, BLDG, ROOM):**

John Kolasinski, building 20, room 23

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**REQUEST FOR TASK PLAN / TASK ORDER****Contract NAS5-99124****Task #: 78****STATEMENT OF WORK: (Continued)**

The FOIL's mission shall consist of NASA fiber optic: 1) research on an as-needed basis, and 2) multi-project support as a service-oriented organization on an as-needed basis.

As of April 1999, EO-1 and MAP projects currently require extensive support from the FOIL. Other projects that are expected to require support in the near-term are HST and GLAS. Research with the University of Maryland and the GSFC Technology Commercialization Office are ongoing low-level efforts.

Contractor personnel shall have demonstrated, comprehensive, and hands-on experience in the area of NASA spaceflight fiber optics and flight hardware handling as the primary requirements. Experience in non-NASA related fiber optics is highly beneficial, but shall not be sufficient to meet SOW requirements unless a special exemption is approved by Code 565 before personnel are in place.

Personnel shall have successfully passed the NASA fiber optics workmanship course, NASA-STD-8739.5, or shall have completed that course within one-year of the formal start of this contact task. The contractor shall not let NASA-STD-8739.5 training expire during the course of the contract.

Major hardware fabrication tasks shall include fiber optic cable/component manufacturing/fabrication and testing. Major test and integration tasks shall be for AS1773 communication systems based on MIL-STD-1553.

Tasks shall require experienced, senior level technicians. Some tasks shall require an experienced engineer. Engineering tasks shall include full-up spacecraft and system level testing, communication protocol/software testing, analyses, and procedure/process verification.

As an on-call/as needed service-oriented organization, the FOIL's multi-project support tasks are expected to have intense peak workloads for shorter periods of time, and greatly reduced workloads on an occasional basis. Requests via the telephone for project support are expected to be handled in a fashion similar to service organization help desks. The contractor shall ensure that staffing is adequate to successfully meet the service-oriented, multi-project requirements of the task.

Research activities are expected to be related to future and ongoing multi-project support work. The contractor may be required to fabricate new devices and fixtures in support of research.

Research activities shall be staffed by one person on an as-needed basis and shall not be impacted by multi-project support personnel issues. Contractor personnel assigned to research tasks shall meet requirements specified in this SOW. Research tasks shall require the solving of new and unique problems independently by the contractor.

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All equipment required by the task shall be furnished by the government.

All drawings (i.e., fixtures, electronic boards, etc.) developed under the task shall be delivered to the government task monitor.

Equipment shall not be removed from the FOIL except by written government authorization.

Travel to outside contractors/vendors about 6 times a year may be required.

All written documentation shall be subject to approval by the government task monitor before they are accepted as a successful completion of a task item.

The contractor shall replace equipment, parts, or materials that are functionally broken or lost due to contractor carelessness or negligence.

The following specific activities are required:

Contractor personnel shall maintain the FOIL in its overall operation. Maintaining orderliness on a daily basis, equipment/parts/material control, and organization of the FOIL facility shall be required.

Contractor personnel shall alert the government task monitor in writing of part, equipment, and consumable material shortages with ample lead-time such that out-of-stock or shortage conditions do not occur.

Multi-project support tasks shall include, both on an as-needed and scheduled basis: optical fiber/cable and pigtail hardware fabrication, component to system level troubleshooting/debugging, component to system level integration, component to system level testing, attending meetings, interpreting component and system level drawings and documents, and procedure/process/report/record generation.

All project work requests shall be finalized using project generated Work Order Authorizations (WOA's) before work shall be started.

Contractor personnel shall operate the FOIL in compliance with all GSFC ISO 9000, and safety requirements. Written procedures shall be used for all work.

Personnel shall generate documentation for processes, procedures, logs, reports, tests, analyses, and records, in cases when they do not exist or require modification. Procedures and processes shall be written in detail such that personnel unfamiliar with the document shall be successful at executing the procedure/process without help.

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Documentation shall contain dates, subjects, references, attachments, background information, issues, technical analysis or reviews, conclusions, and recommendations or options, as required by the document type.

Detailed anomaly reports shall be generated for all problems.

Test reports shall include test completion date, data, and diagrams of the exact equipment hook-up used in the test including all model numbers and serial numbers. Unique serial numbers and launch ends for all cables shall be assigned for all tests and included in test report diagrams. Pass/Fail criteria shall be included in reports.

The contractor shall supply and use relevant existing Telecommunications Industry Association (TIA) fiber optic test procedures (FOTPs) and GSFC procedures, as needed, and modify same for spaceflight applications to reduce procedure development time and cost.

Contractor personnel shall serve as trained, and experienced evaluators of optical fiber core/cladding, wavelength, mode, loss, and power measurement techniques per TIA FOTPs.

Technicians shall perform mathematical calculations of Systeme Internationale (SI) metric, decibel (dB and dBm), and other commonly used measurements in fiber optics.

Contractor personnel shall serve as trained, experienced users of AS1773 communication systems based on MIL-STD-1553. Some tasks shall require detailed knowledge of the AS1773 protocol, message/bit patterns, and test software.

Contractor personnel shall serve as trained, experienced operators of the following fiber optic and related equipment: light sources, power meters, fault finders, optical time domain reflectometers (OTDR), star couplers, transceivers, microscopes, video cameras, interferometers, basic mechanical/measuring tools such as: torque wrenches, scales, calipers, oscilloscopes, optical/electrical converters, launch condition analyzers, personal computers with software ranging from spread sheets to word processing, optical attenuators, power supplies, and all optical cable fabrication tools/equipment including polishing machines.

**Performance Specifications:**

- 1) Spot inspections and monthly inspections of the FOIL's orderliness. Benches shall be clean, organized, and free of extraneous materials except for items relating to work in progress. Paper, magazines and documents shall be appropriately filed and not left on bench tops. The laboratory shall present a clean, neat, and professional appearance. Drawers, cabinets, and benches shall be free of item accumulations. All equipment, tools, parts, and materials not directly related to work in progress shall be in their designated storage places.

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- 2) Monthly reports on part, equipment, and consumable material shortages or out-of-stock conditions. Exceptions shall be made in certain documented cases caused by unexpected demand or usage.
- 3) The yield percentage on all fiber optic hardware terminations shall be > 95%, or one scrap termination allowed when 10 terminations or less are required.

The yield percentage shall be calculated by subtracting the number of scrap terminations from the total number of deliverable terminations required for all job orders during the period. The subtraction result shall be divided by the total number of terminations required by all job orders during the period, then multiplied by 100 to form a percent. A job order shall be the pre-defined number of deliverable terminations in a WOA.

Yield shall be based on completion of a single fiber optic termination, successfully, on a first attempt, based on spaceflight standards.

Repeating any step in a fabrication procedure or process to correct an out-of-specification condition shall be considered rework. All rework shall require prior approval by the government task monitor before it is initiated. Rework rejected by the government shall be considered an unsuccessful termination and scrap. Rework accepted by the government shall be considered a successful termination.

A successful re-termination of a scrapped end shall not be counted as a deliverable termination required for a job order during the period. All unsuccessful re-terminations shall be counted as scrap.

Any subsequent damage to any termination caused by the contractor during testing, handling, or integration shall be counted as scrap. Damage shall be defined to be an out-of-specification condition.

The contractor shall actively maintain a yield log containing termination start date, completion, rework or scrap date, type of termination: successful/unsuccessful/rework, and exact reason for an unsuccessful or rework termination. The yield log shall be used to generate a monthly hardware yield report.

If no terminations are required for a monthly period, that task performance evaluation shall be considered neutral.

- 4) Service requests and hardware deliverables shall meet the requesting project's written schedule in the WOA.
- 5) Rough drafts of documentation, in cases when they did not previously exist, shall be completed within one week after notifying the government task monitor of the deficiency.

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- 6) Final documentation, in cases when they did not previously exist or required modification, shall be completed within one month after completion of the rough draft or rejection by the government task monitor.
- 7) Documentation rejected by the government task monitor as unacceptable more than 3 times shall be considered as an unsuccessful performance evaluation event and shall require a special meeting between the contractor and the government task monitor.